

events ($N=9$ of 12, 75 %). This may contribute to improved health care utilization, as measured by the lower rates of hospitalization or emergency department visits ($N=7$, 78%). PMAS also resulted in cost-savings in seven of the studies. **CONCLUSIONS:** Pharmacist-lead outpatient anticoagulation services attained better quality of anticoagulation control, lower bleeding and thromboembolic events, and lower health care utilization.

PHS11

THE IMPACT OF HOME MEDICATION REVIEW IN PATIENTS WITH TYPE 2 DIABETES MELLITUS LIVING IN RURAL AREAS OF KUANTAN, MALAYSIA

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OBJECTIVES: To investigate whether Home Medication Review (HMR) conducted by a pharmacist can improve the clinical indices, quality of life and medication adherence in patients with Type 2 Diabetes Mellitus (T2DM). **METHODS:** Six month prospective, randomized, controlled study. Adult T2DM patients taking medications for diabetes for at least two years, with HbA1c > 8%, were recruited into the study and randomized to intervention or control. The intervention group received three home visits by a pharmacist (at baseline, 3 months and at 6 months), and one group counselling session with a dietician in addition to the standard medical care. Control group patients only received standard medical care. Primary outcome measures were HbA1c and fasting blood sugar (FBS). Secondary outcome measures include lipid profile (triglycerides, LDL- and HDL-cholesterol); blood pressure (BP); medication adherence (assessed using modified Morisky adherence scale); and quality of life (QoL) assessed using the Short form health survey (SF-36v2). Outcomes were evaluated at baseline, 3 months and at 6 months. **RESULTS:** 73 patients were recruited and randomized to the intervention group (38) or the control group (35), with no significant difference identified in baseline parameters. Data was analysed in SPSSv19 (IBM) using ANOVA and paired t-test. There were significant improvements from baseline to 6 months in the intervention group in; HbA1c (mean difference (MD) = 1.57, 95% CI [0.88, 2.26], $p < 0.001$); FBS (MD = 2.76, 95% CI [0.59, 4.94], $p = 0.009$); systolic BP (MD = 6.56, 95% CI [0.75, 12.36], $p = 0.022$); diastolic BP (MD = 4.44, 95% CI [1.11, 7.78], $p = 0.006$); triglycerides (MD = 0.59, 95% CI [0.24, 0.93], $p < 0.001$) and medication adherence (MD = -2.19, 95% CI [-2.73, -1.65], $p < 0.001$). The control group showed no significant changes in outcome measures. QoL improved in the intervention group but declined in controls. **CONCLUSIONS:** In this study, HMR conducted by a pharmacist provided significant improvement in health and QoL of patients with Type 2 Diabetes Mellitus. HMR may be beneficial for patients with chronic diseases and for the health care system.

PHS12

INCREASED-DOSE HEPATITIS B VIRUS VACCINE IMPROVE THE IMMUNE RESPONSE IN HIV-INFECTED PATIENTS: A META-ANALYSIS

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OBJECTIVES: Hepatitis B co-infection may lead to increased mortality of HIV patients. All HIV-infected patients are recommended to receive hepatitis B virus (HBV) vaccination to prevent the co-infection. However, HIV-infected patients often fail to produce protective antibodies to HBV vaccine. This study is sought to assess the efficacy of increased-dose HBV vaccine in HIV-infected patients. **METHODS:** A systematic literature review and meta-analysis of clinical trials were conducted. The search was carried out on PubMed, EMBASE and the Cochrane Database of Systematic Reviews, from beginning of databases to December 2013. Keywords used in the electronic searches included "hepatitis b", "HBV", "vaccine", "vaccination", "immunization", "HIV", and "ADIS". We only included studies those published in full-text papers. Inclusion criteria are as follows: English language and randomized control trials those compare the response rates of increased-dose HBV vaccine (increase dose or administration times of standard dose) and standard-dose vaccine (20 μ g 3 times at month 0, 1, and 6) in HIV-infected patients. Random effect model with heterogeneity analyses were used. The result was reported by risk ratio. Statistical analyses were performed using the software program Review Manager 5.2. **RESULTS:** Of 1204 references yielded by electronic searches, five trials, which represent a total of 424 patients, were included in the final analysis. The heterogeneity was moderate ($I^2=32\%$) according to the I^2 test. Pooling of study results showed a significant increase in response rate among increased-dose patients versus control patients; the pooled risk ratio (RR) was 1.17 (95% CI: 1.06-1.30). The number of intent-to-treat is 9. Only one study presented severe adverse reaction reports related to the vaccination, and no increased risk was observed. **CONCLUSIONS:** Increasing the dosage of vaccine may improve the immune responses significantly in HIV-infected patients.

PHS13

IMPROVING HEALTH CARE QUALITY, SAFETY, AND COSTS THROUGH THE INTEGRATION OF CLINICAL PHARMACY SERVICES

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OBJECTIVES: Medications must be prescribed and administered properly to be effective for the treatment of chronic conditions. Medication errors and poor adherence lead to increased costs and poor outcomes. Evidence shows that clinical outcomes improve when pharmacists are integrated into the care team. The objectives of this study were to improve health care quality, medication safety, and reduce health care costs for high-risk patients through the integration of clinical pharmacy services into patient-centered medical homes. **METHODS:** Clinical pharmacy teams consisting of a pharmacist, resident, and pharmacy technician were integrated into five safety net clinics starting in September 2012. Five additional sites were added in October 2013. These teams target high-risk patients with poor chronic disease control. The services provided include medication and disease state management,

medication reconciliation, and medication access. This study has a pre-post design with control sites to provide scientific evidence of the clinical and economic impact of the interventions. The data collected includes measures of health outcomes, medication-related problems, and pharmacist interventions. **RESULTS:** 3,001 unique patients were seen by the pharmacy teams during the initial 13 months. A majority of these patients suffer from uncontrolled diabetes, hypertension or both. For patients with baseline A1C > 9%, 30% achieved A1C < 8% in the intervention group versus 13% in the control group after 180 days. For patients with initial BP > 140/90, 87% of patients in the intervention group achieved BP < 140/90 within 45 days. 19,696 medication-related problems were documented for 1,993 patients. Problems were categorized into four groups including appropriateness/effectiveness (43%), medication safety (18%), medication nonadherence/misuse (27%), and miscellaneous (9%). 2,150 potential adverse drug events (pADEs) were identified and resolved for patients seen by the clinical pharmacy teams. The most common pADEs were excessive dosing, adverse drug reactions, and polypharmacy. **CONCLUSIONS:** The integration of clinical pharmacy teams into the patient-centered medical home improves health outcomes and medication safety.

PHS14

EPIDEMIOLOGY OF PSYCHIATRIC HOSPITALIZATIONS PUBLIC HEALTH SYSTEM IN BRAZIL BETWEEN 2010 AND 2012

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OBJECTIVES: This study aims to analyze the profile of psychiatric hospitalizations within the public health service in Brazil between 2010 and 2012, analyzing the main causes of hospitalization, according to the International Classification of Diseases (WHO CID.10), the profile of patient and place of residence in Brazil. **METHODS:** Is a descriptive study on the profile of psychiatric hospitalizations within the public system of Brazil present in the database of the Hospital Information System (HIS) of the Ministry of Health from January 2010 to December 2012. **RESULTS:** Data analysis showed that there was no significant change in the number of cases between 2010 and 2012; the total number has remained at an average of 280.150 admissions per year. Remained the same profile of hospitalization: the majority of were for males (65%), 40% white, 26% brown and 6% black, and 28% of hospitalized patients do not report skin color. The most admissions occurred between the ages of 30 and 49 years (50%). Regarding the causes of hospitalization, classified according to ICD-10 (F00-F99), the pattern found was 35% of the causes of hospitalization for schizophrenia, 20% are disorders related to alcohol use, 18% are related disorders psychotropic and 18% are mood disorders. Other causes, such as dementia, and others appear less than 5% of cases each. Regarding the profile of admissions by place of residence, it was observed that the more developed regions of the country had the highest percentage of hospitalizations, Southeast (42%) and South (28%). **CONCLUSIONS:** This study show that use of secondary data in surveys, from information system health, plus the low cost generated, an important source of epidemiological information, especially in countries with universal coverage of public health services such as Brazil, in which the majority of the population depends on the public health system.

PHS15

PNEUMOCOCCAL VACCINE TARGETING STRATEGY FOR THE OLDER ADULTS: CUSTOMIZED RISK PROFILING

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OBJECTIVES: Current pneumococcal vaccine campaigns take a broad, primarily age-based approach to immunization targeting, overlooking many clinical and administrative considerations necessary in disease prevention and resource planning for specific patient populations. We aim to demonstrate the utility of a population-specific predictive model for hospital-treated pneumonia to direct effective vaccine targeting. **METHODS:** Data was extracted for 1,053,435 members of an Israeli HMO, age 50 and older, during the study period 2008-2010. We developed and validated a logistic regression model to predict hospital-treated pneumonia using training and test samples, including a set of standard and population-specific risk factors. The model's predictive value was tested for prospectively identifying cases of pneumonia and invasive pneumococcal disease (IPD), and was compared to the existing international paradigm for patient immunization targeting. **RESULTS:** In a multivariate regression, age, co-morbidity burden and previous pneumonia events were most strongly positively associated with hospital-treated pneumonia. The model predicting hospital-treated pneumonia yielded a c-statistic of 0.80. Utilizing the predictive model, the top 17% highest-risk within the study validation population were targeted to detect 54% of those members who were subsequently treated for hospitalized pneumonia in the follow up period. The high-risk population identified through this model included 46% of the follow-up year's IPD cases, and 27% of community-treated pneumonia cases. These outcomes were compared with international guidelines for risk for pneumococcal diseases that accurately identified only 35% of hospitalized pneumonia, 41% of IPD cases and 21% of community-treated pneumonia. **CONCLUSIONS:** We demonstrate that a customized model for vaccine targeting performs better than international guidelines, and therefore, risk modeling may allow for more precise vaccine targeting and resource allocation than current national and international guidelines. Health care managers and policymakers may consider the strategic potential of utilizing clinical and administrative databases for creating population-specific risk prediction models to inform vaccination campaigns.

PHS16

UNDERSTANDING THE CHOICE OF FAMILY PLANNING METHODS AMONG WOMEN AGED 15-49 YEARS IN UGANDA: EVIDENCE FROM THE UGANDA DEMOGRAPHIC AND HEALTH SURVEY 2011

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